

Lesson Plan

**B. Tech. I Year
14BT1ES01: Programming in C& Data Structures
(Common to ECE, EEE, EIE, ME and CE)**

S. No.	Topic	No. of periods required	Date(s) covered	No. of periods used	Book(s) followed	Self-Study Concepts
Unit-I: Programming Languages						
1.	Compiler, Interpreter, Loader, Linker	2			T1	1. Draw a flow-chart to find largest number from the given list of integers. 2. Write a C program to find the roots of a given equation. [hint: $\sqrt{((b^2+4ac)/2a)}$]
2.	Program Execution, Classification of Programming	1			T1	
3.	Algorithms	2			T1	
4.	Flowcharts	2			T1	
5.	Basics of C: Introduction, Standardizations of C language	1			T1	
6.	Developing Programs in C	1			T1	
7.	Structure of C program	1			T1	
8.	Variables, Data Types, Declaration	2			T1	
9.	Token	1			T1	
10.	Operators and Expressions	4			T1	
11.	L values and R values	1			T1	
12.	Type Conversion in C	2			T1	
Total of periods required:		20	Total of periods used:			
Unit-II: Input and Output						
13.	Basic Screen and Keyboard I/O in C	1			T1	1. Write a C program to print even numbers using goto and continue
14.	Non Formatted input and output	1			T1	
15.	Formatted input and output	3			T1	
16.	Control Statements: Specifying Test Condition for Selection and Iteration, Writing Test Expressions	2			T1	2. Write a C program to print the factorial form 1 to the given number.
17.	Conditional Execution and Selection	6			T1	
18.	Iterative and Repetitive Execution	5			T1	3. Write a C program to

19.	GOTO Statement, Special Control Statements	3			T1	calculate the sum of square of series.
20.	Nested loops	1			T1	
21.	Formative Test and Remedial	1				
Total of periods required:		23	Total of periods used:			
Unit-III: Arrays and Strings						
22.	One dimensional Array	3			T1	1. Write a C program to classify N integers each as perfect, abundant and deficient. 2. Write a C program to sort the given student names in ascending order.
23.	Strings: One-Dimensional Character Arrays	3			T1	
24.	Multi-Dimensional Arrays	2			T1	
25.	Arrays of Strings	2			T1	
26.	Functions: Concept of function	3			T1	
27.	Call by Value Mechanism	1			T1	
28.	Passing arrays to Functions	1			T1	
29.	Scope and Extent	1			T1	
30.	Storage classes	2			T1	
31.	Inline function	1			T1	
32.	Recursion	1			T1	
33.	Searching	2			T1	
34.	Sorting	4			T1	
Total of periods required:		26	Total of periods used:			
Unit-IV: Pointers and Files in C						
35.	Pointers: Introduction, Understanding Memory Address	1			T1	1. Write a C program to copy contents of one file into another. 2. Write a C program to append one file content into another through command line arguments.
36.	Address Operator	1			T1	
37.	Pointer	2			T1	
38.	Void and Null Pointer	1			T1	
39.	Use of pointers	1			T1	
40.	Arrays and Pointers	2			T1	
41.	Pointers and Strings	1			T1	
42.	Pointer Arithmetic	2			T1	
43.	Pointers to Pointers	1			T1	
44.	Pointers to Arrays	1			T1	
45.	Pointers to Functions	2			T1	
46.	Dynamic Memory allocation	1			T1	
47.	Pointer and Const Qualifier	1			T1	
48.	User-Defined data types and variables: Structures	3			T1	
49.	Union	1			T1	
50.	Enumerations types, Bitfields	1			T1	
51.	Files in C: Working with text files	4			T1	
52.	Working with Binary Files	1			T1	
53.	Working with Random Access Files	1			T1	

54.	Other file management functions	1			T1	
55.	Command line arguments	1			T1	
56.	C preprocessor	2			T1	
57.	Type Qualifier	1			T1	
58.	Formative Test and Remedial	1				
Total of periods required:		34	Total of periods used:			
Unit-V: Linked Lists						
59.	Singly Linked List	2			T1	1. Write a C program to perform the operations of Stack using Single Linked List.
60.	Circular Linked List	2			T1	
61.	Doubly Linked List	2			T1	
62.	Applications of Linked List	1			T1	
63.	Stacks and Applications	2			T1	
64.	Queues and Applications	1			T1	
65.	Other Variations of Queues	2			T1	
66.	Tree: Binary Tree	1			T1	
67.	Binary Tree Traversals	1			T1	
68.	Kinds of Binary Tree	1			T1	2. Write a C program to perform the operations of Queue using Double Linked List.
69.	Binary Search Tree and Applications of Tree	2			T1	
Total of periods required:		17	Total of periods used:			
Grand total of periods required:		120	Grand total of periods used:			

TEXT BOOKS:

T1: PradipDey and Manas Ghosh, “**Programming in C**”, Second Edition, Oxford University Press, New Delhi, 2007.

REFERENCE BOOKS:

R1: D. Samantha, “**Classic Data Structures**”, Second Edition, PHI Learning, New Delhi, 2004.

R2: Behrouz A. Forouzan and Richard F. Gilberg, “**A Structured Programming Approach using C**”, Third Edition, Cengage Learning, New Delhi, 2007.

Signature of the faculty member

Signature of the HOD